



**SUPPLY, DELIVERY, TESTING AND COMMISSIONING  
OF 1 OFF PLASMA METAL CUTTING MACHINE (to cut  
32 mm and pierce 22 mm metal plates) FOR PRODUCT  
DEVELOPMENT BUSINESS AT DURBAN MAIN  
CENTRE.**

**311 SOLOMON MAHLANGU DRIVE, ROSSBURGH.**

**REFERENCE NO: PD\_RD\_DBN\_SPEC\_096**

**Revision : 00**

**Date of release: DECEMBER 2022**

# Table of Contents

---

| Content   | Page no |
|---|---------|
| 1. INTRODUCTION/ SCOPE OF WORK                                  | 3       |
| 2. SITE INSPECTION  | 3       |
| 3. INFORMATION REQUIRED   | 3       |
| 4. TECHNICAL REQUIREMENTS                                       | 4       |
| 5. SPECIFICATION REQUIREMENTS                                   | 4       |
| 6. CIDB   | 7       |
| 7. OTHER INFORMATION RELATED TO SCOPE                           | 8       |
| 8. HEALTH AND SAFETY REQUIREMENTS                               | 8       |
| 9. SPECIALIST SUB-CONTRACTORS                                   | 9       |
| 10. MATERIAL AND WORKMANSHIP                                    | 9       |
| 11. GENERAL REQUIREMENTS  | 10      |
| 12. DEFINITIONS AND ABBREVIATIONS                               | 10      |
| 13. GENERAL   | 10      |
| 14. SITE ESTABLISHMENT  | 10      |
| 15. PENALTY CLAUSES   | 10      |
| 16. CONSTRUCTION INDUSTRY DEVELOPMENT BOARD (CIDB) REGISTRATION | 11      |
| 17. SCHEDULE OF PRICES  | 12      |
| 18. TENDER EVALUATION CRITERIA                                  | 13      |

## DOCUMENT AUTHORITIES

|                     |  |
|---------------------|--|
| Department          | PEMM   |
| Department Affected | Product Development  |
| Effective Date      | December 2022  |
| Compiled by         | Zolani Mngqithi  |
| Designation         | Engineering Technician   |
| Signature & Date    |  06.12.2022   |
| Reviewed by         | Evani Roopan   |
| Designation         | Manager (Product Development)  |
| Signature & Date    |  06/12/2022 |
| Approved by         | Lindo Ngcobo   |
| Designation         | Maintenance Manager  |
| Signature & Date    |  06/12/2022 |

## 1. INTRODUCTION

This specification is for the:

| #  | TASK                  | REQUIRED |
|----|-----------------------|----------|
| 1  | Design of foundations |          |
| 2  | Manufacture           |          |
| 4  | Foundations           |          |
| 5  | Supply                | ✓        |
| 6  | Delivery              | ✓        |
| 7  | Documentation         | ✓        |
| 8  | Testing               | ✓        |
| 9  | Training              | ✓        |
| 10 | Commissioning         | ✓        |

of the specified:

| # | ITEM   | REQUIRED |
|---|--|----------|
| 1 | Supply, delivery, testing and commissioning of 1 off plasma metal cutting machine (to cut 32 mm and pierce 22 mm metal plates) for Product Development Business at Durban Main Centre. | ✓        |

## 2. SITE INSPECTION

- 2.1 All prospective contractors shall be required to undertake a compulsory site inspection to fully acquaint themselves with all aspects involved.
- 2.2 Arrangements to visit the site and confirmation of the date and time of the site inspection shall be made with Transnet Engineering Contract Manager.
- 2.3 The site inspection certificate shall be completed and countersigned by the Contract Manager on the day of the visit and must be submitted with the tender documents.

## 3. INFORMATION REQUIRED

- 3.1 Offers will not be considered unless full particulars and sufficient literature are provided at the tendering stage to enable Transnet Engineering Technical Officers the opportunity to assess each technical offer properly.
- 3.2 Prospective Contractors will complete the relevant questionnaire in full and must indicate whether their offer complies with each item of the specification
- 3.3 Should there be insufficient space for furnishing full details; contractors shall provide the additional details in their covering letter. The additional details shall be numbered in accordance with the applicable clause specified in the specification.

- 3.4 As prospective contractors are considered to be experts in their field, they are obliged to identify any shortcomings, such as omissions or sub-standard requirements, to the completeness of this specification. These must be brought to the attention of Transnet Engineering at tender stage with alternatives to address these shortcomings. However, each offer shall be quoted for separately.

#### 4. TECHNICAL REQUIREMENTS

The following regulation and codes must be complied with:-

- The Occupational Health and Safety Act – Act 85 of 1993.
- 4.1 Except where otherwise provided for in the specification, all equipment offered will comply with the requirements of the relevant standard specifications of the SABS, if published, otherwise with the relevant standard of the British Standards Institution in force at the time of tendering.
- 4.2 Where equipment offered complies with the recognized standards of the country of manufacture and not specifically with the standards required by this specification, such equipment will be considered at the discretion of Management. In this case, tenders shall state fully all respects in which the equipment departs from the standard laid down in this specification.
- 4.3 The successful tender will at the conclusion of the installation provide a document along the lines “that the installation complies with national/international requirements and that all selected /designed items are compliant with Act 85 of 1995 and SABS practices applicable to the installation. The equipment has been commissioned/ calibrated and employees as specified have been trained and found competent to operate the plant.”

#### 5. SPECIFIC REQUIREMENTS

**Any person with the intention of tendering shall ensure that the information below is complied with. The specification requirements below are binding and must be complied with.**

- 5.1 Operational Parameters
- Refer to machine specifications.
- 5.2 Environment
- Indoors under dusty industrial conditions, and refer to section 11 for external conditions.

### 5.3 Specification

| ITEM   | REQUIRED  | DETAILS OF OFFER<br>Comply (Yes) /<br>Do not comply (No) |
|--------|---|--|
| 5.3.1  | This specification requirement covers the minimum requirements for supply, delivery, testing and commissioning of 1 off plasma metal cutting machine (for cutting 32 mm and piercing 22 mm).  |  |
| 5.3.2  | <b>Input voltages :</b> 400 V $\pm$ 5%, 3-PH, 50Hz.<br>• Fit 63Amp 400V 5 pin Marechal Male plug to supply cable.   |  |
| 5.3.3  | <b>Input power cable length:</b> approx.3 m.  |  |
| 5.3.4  | <b>Power output:</b> 16,8 kW.   |  |
| 5.3.5  | <b>Output current:</b> 30–105 A   |  |
| 5.3.6  | <b>Duty cycle @ 40° C</b><br><b>400 V CE</b><br>80% @ 105 A, 400 V, 3-PH<br>100% @ 94 A, 400 V, 3-PH<br><b>230-400 V</b><br>70% @ 105 A, 230 V 3-PH<br>80% @ 105 A, 400 V, 3-PH<br>100% @ 94 A, 400 V, 3-PH<br>100% @ 88 A, 230 V, 3-PH                                 |  |
| 5.3.7  | Each machine shall be capable of cutting 32 mm and piercing 22 mm.  |  |
| 5.3.8  | <b>Dimensions (approx. ):</b> 592 mm D; 274 mm W; 508 mm H  |  |
| 5.3.9  | <b>Weight with torch (approx.):</b> 45kg  |  |
| 5.3.10 | <b>Gas supply:</b> _____ (Bidder to indicate the type of gas used by the machine) e.g. Nitrogen, etc.   |  |
| 5.3.11 | <b>Gas inlet flow rate/ pressure</b><br>Cutting: 217 l/m @ 5,9 bar Gouging: 227 l/m @ 4,8 bar.  |  |
| 5.3.12 | Supply 2 off 75° hand torch.  |  |
| 5.3.13 | <b>Warranty</b><br>Power supplies to carry a 3-year warranty and torches a 1-year warranty.   |  |
| 5.3.14 | <b>Safety standards:</b><br>• The bidder to supply and indicate the design standards of the machines.<br>• The bidder to indicate all safety features built into the machine.<br>• The bidder shall include full description of the operation standards of the machine. |  |
| 5.3.15 | Catalogues to be supplied at tender stage.  |  |
| 5.3.16 | <b>Documentation:</b><br>3 sets off hard copies each with a disc containing documentation in PDF Format.<br>• Operating Manual.<br>• Maintenance Manual.<br>• Electrical Schematics.  |  |

|        |   |  |
|--------|---|--|
|        | <ul style="list-style-type: none"> <li>• Mechanical Drawings.</li> <li>• Parts List.</li> </ul>   |  |
| 5.3.17 | <p><b>TRAINING :</b></p> <p>Technical experts of the manufacturer during commissioning of machine shall fully and adequately train operators/ maintenance staff nominated by the client including repairs of electronics parts of the machines.</p> |  |

#### 5.4 Supply and delivery

- Durban main centre, 311 Solomon Mahlangu Drive, Rossburgh.

#### 5.5 Markings

- All labels and markings shall be indelible and only removable by deliberate intent.

#### 5.6 Safety Features

- The whole machine shall have a fail to safety protection system.

#### 5.7 Testing

- All prescribed tests shall be carried out on equipment as well as the testing or the installation before commissioning.
- Transnet also reserves the right to carry out any check tests on the equipment and installation.
- Notwithstanding the successful completion of tests, the contractor will still be responsible for the efficient operation of the equipment and the installation.

#### 5.8 Commissioning

- **A testing period of 1 month (744 hours for 24/7 shifts and 248 hours for 8 hour shifts).**
- **No equipment will be accepted by Transnet without the satisfaction of the conditions above.**
- The contractor shall be fully responsible for any damage caused to all supplied equipment to Transnet Engineering's assets during the installation, testing and commissioning. The supplier shall conduct a risk assessment as to identify anything that might hinder the installation of the required equipment.

#### 5.9 Maintenance

- The maintenance plan shall be for 12 months. The tenderers shall include the maintenance plan. The quote for maintenance plan shall be added on the Schedule of prices.

#### 5.10 Spares

- The successful tenderer shall supply Transnet Engineering with three sets of blown out diagrams and schematics of the complete machine as well as a detailed copies of the list of critical spares for all equipment including OEM numbers.

- The tenderers shall indicate the availability and required lead times for the spares considered to be critical for the successful operation of the equipment.

#### 5.11 Warranty

- The contractor shall undertake to repair all faults due to bad workmanship and/or faulty materials during a period of twelve calendar months, calculated from the date that the completed plant installation is accepted by Transnet Engineering.
- Any latent defects that become apparent during the guarantee period shall be rectified to the satisfaction of Transnet Engineering at the cost of the supplier.
- The contractor shall undertake work on the rectification of any defects that may arise during the guarantee period within 7 days of being notified of such defects.
- Power supplies to carry a 3-year warranty and torches a 1-year warranty.
- **A maintenance contract for the warranty period shall be included in the quoted price and shall involve Transnet employees to learn.**

#### 5.12 After-Sales Service

- The successful tenderer shall provide Transnet Engineering with acceptable proof that spares can be easily and speedily procured for the equipment within 7 working days through agents locally.

#### **The following must be supplied on commissioning of the machinery:**

- Electrical certificate of compliance.
- Performance Test certificate.
- Certificate of calibration.
- Electrical schematic drawings for all components.
- Three (3) maintenance manuals and parts catalogues shall be supplied in hardcopy format with a CD of manuals in PDF format with each set.
- Three (3) operating and maintenance manuals and schedule for all components shall be supplied in hardcopy format with a CD of manuals in PDF format with each set.
- Operator and Maintenance staff training for less than three people.
- All required software (Soft copies).

**Note:** All work to be completed in each respect by suitably qualified person

## **6. CONSTRUCTION INDUSTRY DEVELOPMENT BOARD (CIDB) REGISTRATION**

No CIDB Required



## 7. OTHER INFORMATION RELATED TO THE SCOPE

This specification states the minimum requirements relating to the work and in no way absolves the contractor from responsibility for sound engineering practice. Any omissions or sub-standard requirements of this specification must be brought to the attention of Transnet Engineering at tender stage and optional prices for addressing such omissions must be provided.

- 7.1 Any matter relating to this work, which requires a decision from Transnet Engineering shall be presented to the Project Manager in charge.
- 7.2 All offers shall be completed in every respect with this specification. Only completed tenders shall be considered
- 7.4 The Technical Officer reserves the right to have the proposal checked independently by a third party.
- 7.5 Tenders must allow for monthly progress and clarification meetings on site initially and after commissioning for defect meetings when required. A meeting will be held after issuing of the tender to establish the exact scope and magnitude of the contract. No tender will be considered unless it has this Certificate signed by the Engineer or his representative.

## 8. HEALTH AND SAFETY REQUIREMENTS

- 8.1 All repair work whether detailed in this scope of work or not shall comply with the requirements of the Occupational Health and Safety Act 85 of 1993 as amended and all other applicable legislation including specific set of regulations and local authority bylaws where applicable.
- 8.2 All the necessary safety equipment such as guards over rotating equipment shall be supplied and the equipment shall comply fully with all the requirements of the South African Occupational Health and Safety Act, Act 85 of 1993 and all other applicable legislation including specific set of regulations and local authority bylaws where applicable. At all times during the manufacture, assembly and testing of the equipment the contractor will be responsible for the safety of all persons on site and the equipment.

### 8.3 SHE SPECIFICATION

Prior to commencement of contract, the contractor shall be issued with a SHE specification in order to compile a SHE file in line with TE requirements.

Prior to establishing on site, it is an explicit requirement of this contract that all of the Contractor's personnel directly involved with this contract, including those of sub-contractors, attend a **Safety induction course**. Transnet will provide the course free of charge and attendance is compulsory for all personnel under the control of the Contractor who, during the duration of the contract, will be present on site whether on a full time or adhoc basis.

The contractor must allow for all additional charges because of these requirements as no claims for extras will be accepted in connection with the foregoing.

### 8.4 As part of the legislative and TE SHE requirements.

The successful contractor is required to conduct a Risk assessment to ascertain all potential risks associated with this project. The completed risk assessment is to be formally submitted to the Risk department via the project manager at least two weeks prior to the commencement of the actual project.

A safety file and associated documents will be required from a successful tenderer and such will be communicated by the Risk department.

## **8.5 Requirements for prevention of Covid-19**

- 8.5.1 COVID-19 Safety Plan.
- 8.5.2 Daily Screening questionnaire.
- 8.5.3 Return to work induction register- Induction Presentation/TE will also conduct the COVID-19 induction.
- 8.5.4 COVID-19 Employee questionnaire checklist.
- 8.5.5 Fitness Certificates.
- 8.5.6 Risk Assessments register.
- 8.5.7 COVID-19 PPE issue register/sanitizer.

## **9. SPECIALIST SUB-CONTRACTORS**

9.1 Only specialist sub-contractors who have previously successfully completed work of the type and extent specified in this document should be engaged.

The tenderer shall provide the technical officer with sufficient proof of having suitable experience regarding the design and manufacturing of similar equipment. To this end, complete and detailed reference list shall be submitted with the tender. Reference list shall include addresses as well as contact person who may be visited for inspection of the equipment during the adjudication period.

9.2 The tender shall submit a complete list of proposed sub-contractors and suppliers of major components with his tender.

9.3 The tenderer shall be prepared to commit themselves in writing to the technical officer with an adequate, experienced and stable project team for the duration of the contract.

9.4 Transnet Engineering will not consider any Tenderer's offer that, in the sole opinion of Transnet Engineering, does not have adequate experience in the design and manufacture of such equipment

9.5 Contractors shall do the installation simultaneously with other contractors on-site busy with other work and shall plan work that it integrates with other work performed.

## **10. MATERIAL AND WORKMANSHIP**

10.1 Machinery shall be offered complete in all respects, including all standard Equipment normally offered by manufactures, all of which shall be specified in detail.

10.2 The equipment, as made and supplied, shall be complete in every respect, of modern design, using the most advanced proven technology extensively supported by reputable local companies, and be built to good engineering practices. Tenderers shall supply a list of all the main components (mechanical, electrical etc.) proposed as well as the addresses of the local support companies.

10.3 All parts and components shall be adequately protected against damage and corrosion during shipping, transport and storage.

Should any of the items called for be standard equipment, then the words "Standard Equipment" shall appear against the item.

## 11. GENERAL REQUIREMENTS

Operation will be in the following conditions:

|                     |              |
|---------------------|--------------|
| Altitude            | Sea level    |
| Ambient temperature | 0°C to 45°C  |
| Relative humidity   | 50% to 100%  |
| Atmosphere          | Heavy saline |

- 11.1 Tenderers shall indicate clause-by-clause either that they comply in every respect with the specific requirements, or if not, exactly how it differs.

## 12. DEFINITIONS AND ABBREVIATIONS

|                   |  |
|-------------------|--|
| CLIENT            | Transnet Engineering Durban                            |
| TECHNICAL OFFICER | Project Manager, Transnet Engineering Durban           |
| CONTRACTOR        | Contractor appointed under this specification document |
| SABS              | South African Bureau of Standards                      |
| BS                | British Standard Specification                         |
| FEM               | Federation of European Mechanical Handling Standard    |
| ISO               | International Organisation for Standardisation         |

## 13. GENERAL

- 13.1 The successful tenderer will be subjected to a workshop inspection by Transnet Engineering, to ensure that the facilities are to the satisfaction of the Transnet Engineering in terms of the quality control and equipment capabilities for manufacturing such type of equipment.
- 13.2 The tenderers shall guarantee that the rating and size etc. of the equipment offered, will be adequate to perform the duties required.

## 14. SITE ESTABLISHMENT

- 14.1 The contractor shall be solely responsible for safety of his staff and for Providing security to safeguard his works and material on site, until such a time.
- 14.2 The contractor shall be required to attend site meetings when convened by the Project Leader controlling the contract.
- 14.3 The contractor shall be responsible for any damages caused by his staff to the building and civil works on site.

## 15. PENALTY CLAUSES

- 15.1 Due to the criticality of this project, penalties will be levied for late deliveries.

### 16. **SCHEDULE OF PRICES:**

All prices **exclude Vat** and additional items listed (with prices) shall be clearly labelled as optional or essential.

| <b>Item</b>                             | <b>Qty</b> | <b>Price per item</b> | <b>Price</b> |
|---|------------|-----------------------|--------------|
|   |            | R                     | R            |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
|   |            |                       |              |
| <b>Total (Excl. VAT) to tender form</b> |            |                       | <b>R</b>     |

Tenderer: \_\_\_\_\_

Date: \_\_\_\_\_

Witness 1: \_\_\_\_\_

Date: \_\_\_\_\_

Witness 2: \_\_\_\_\_

Date: \_\_\_\_\_

## 17. TENDER EVALUATION CRITERIA

The following criteria will be used to award the tender. Should there be a criteria over and above the listed below, that will be used, such criteria will be specifically stated. **Technical evaluation criteria**

| No.   | Technical Evaluation Criteria   | % Weightings | Scoring guideline   |  |           |   |           |                             |   |
|---|---|--------------|---|--|-----------|---|-----------|-----------------------------|---|
| 17.1  | <p><b>Delivery lead times from the date the PO is released. Detail project plan with milestone reflecting the entire lead-time of the project</b></p>   | 20 points    | <p>As the response from the supplier / service provider</p> <table border="1" style="width: 100%;"> <tr> <td>Project plan &amp; Lead time equals or less than 2 weeks</td> <td style="text-align: center;">20 points</td> </tr> <tr> <td>Lead time more than 2 weeks, not more than 3 weeks</td> <td style="text-align: center;">10 points</td> </tr> <tr> <td>Lead time more than 3 weeks</td> <td style="text-align: center;">0</td> </tr> </table>   | Project plan & Lead time equals or less than 2 weeks | 20 points | Lead time more than 2 weeks, not more than 3 weeks                              | 10 points | Lead time more than 3 weeks | 0 |
| Project plan & Lead time equals or less than 2 weeks                            | 20 points   |              |   |  |           |   |           |                             |   |
| Lead time more than 2 weeks, not more than 3 weeks                              | 10 points   |              |   |  |           |   |           |                             |   |
| Lead time more than 3 weeks   | 0   |              |   |  |           |   |           |                             |   |
| 17.2  | <p><b>Compliance to scope of work</b></p> <ul style="list-style-type: none"> <li>Adherence to TE specification (read, completed and signed off all the pages and return with tender document)</li> </ul>  | 50 points    | <p>Completed and signed off the scope of work / specification</p> <table border="1" style="width: 100%;"> <tr> <td>Specification returned (complete and signed off)</td> <td style="text-align: center;">50 points</td> </tr> <tr> <td>Specification returned but not fully completed, not signed off on all the pages</td> <td style="text-align: center;">0 points</td> </tr> </table>  | Specification returned (complete and signed off)     | 50 points | Specification returned but not fully completed, not signed off on all the pages | 0 points  |                             |   |
| Specification returned (complete and signed off)                                | 50 points   |              |   |  |           |   |           |                             |   |
| Specification returned but not fully completed, not signed off on all the pages | 0 points  |              |   |  |           |   |           |                             |   |
| 17.3  | <p><b>Experience</b></p> <p><b>Specific knowledge of supplying, repair, maintenance, testing and commissioning of plasma cutting machines:</b></p> <ul style="list-style-type: none"> <li>Previous experience of supply and delivery of industrial welding machines in the past 10 years, with contactable references on a letter head of the company.</li> </ul> | 20 points    | <p>Four (4) contactable references, in the format of letters on client's letterhead submitted = 20 points</p> <p>Three (3) contactable references, in the format of letters on client's letterhead submitted = 15 points</p> <p>Two (2) contactable references, in the format of letters on client's letterhead submitted = 10 points</p> <p>One (1) contactable references, in the format of letters on client's letterhead submitted = 5 points</p> <p>Zero (0) /no reference letters submitted = 0</p> |  |           |   |           |                             |   |
| 17.4  | <p><b>Quality control and assurance</b></p> <p>The tenderer shall provide satisfactory evidence to show quality assurance programme. The manufacturer shall have quality management certificate (ISO 9000). The bidder to submit the ISO 9000 certificate.</p>  | 10 points    | <p>Submission of manufacturer's quality management system certificate from the formal accredited body. = 10 points</p> <p>No submission of quality management system certificate from the formal accredited body. = 0</p>   |  |           |   |           |                             |   |

**Total Weighting:**

|  |                   |
|--|-------------------|
|  | <b>100 points</b> |
|--|-------------------|

**Minimum qualifying score required:**

|  |                  |
|--|------------------|
|  | <b>80 points</b> |
|--|------------------|

## **18. VERIFICATION OF COMPLIANCE TO THE SPECIFICATION**

ITS IS MANDATORY FOR ALL THE SUPPLIERS/BIDDERS TO COMPLETE THIS FORM. AN INCOMPLETE FORM WILL RESULT IN DISQUALIFICATION.

| No.  | Heading/Subsection     | Comply |    | Comment |
|------|------------------------|--------|----|---------|
|      |                        | Yes    | No |         |
| 1    | Scope of work          |        |    |         |
| 2    | Site inspection        |        |    |         |
| 4    | Technical requirements |        |    |         |
| 5.3  | Specification          |        |    |         |
| 5.4  | Supply and delivery    |        |    |         |
| 5.5  | Markings               |        |    |         |
| 5.7  | Testing                |        |    |         |
| 5.8  | Commission             |        |    |         |
| 5.9  | Maintenance            |        |    |         |
| 5.10 | Spares                 |        |    |         |
| 5.11 | Warranty               |        |    |         |
| 5.12 | After sales service    |        |    |         |
| 6    | Penalty clauses        |        |    |         |

**TENDERERS: PLEASE NOTE THAT YOUR TENDER WILL BE REJECTED IF ANY OF THE ABOVE ITEMS ARE OMITTED OR NOT FILLED.**